CLAIMS:

1. A signal transmission system (1) having a signal source device (2) that is arranged to generate a transmission signal, having a signal sink device (4) that is arranged to process the transmission signal, and having transmission means that are provided between the signal source device (2) and the signal sink device (4), that can be coupled to the signal source device (2) and the signal sink device (4) for the transmission of signals, and that are arranged to transmit a signal representing the transmission signal from the signal source device (2) to the signal sink device (4), characterized in that the signal source device (2) is arranged to emit an optical signal (S) that represents the transmission signal generated, in that the signal sink device (4) is arranged to receive the optical signal (S) emittable by the signal source device (2), and in that the transmission means are formed by light-guiding means (7) that are able to be coupled optically to the signal source device (2) and the signal sink device (4) and that are arranged to transmit the optical signal (S).

2. A signal transmission system (1) as claimed in claim 1, characterized in that, of the signal source device (2) and the signal sink device (4), at least one of the two said devices is arranged at a distance from the light-guiding means (7) and is coupled to the light-guiding means (7) via an air-gap (10, 11).

3. A signal transmission system (1) as claimed in claim 1, characterized in that the light-guiding means (7) are of a multi-fiber form.

4. A signal transmission system (1) as claimed in claim 1, characterized in that, of the signal source device (2) and the signal sink device (4), at least one of the two said devices is arranged for fastening to a garment (15) and in that the light-guiding means (7) are arranged for fastening to a garment (15).

5. A signal transmission system (1) as claimed in claim 4, characterized in that the light-guiding means (7) have fastening means (18) for fastening to a garment (15).

6. A signal transmission system (1) as claimed in claim 1, characterized in that, of the signal source device (2) and the signal sink device (4), at least one of the two said devices is arranged for fastening to a garment (15), and in that the light-guiding means (7) form part of a garment (15).

7. A signal transmission system (1) as claimed in claim 1, characterized in that the light-guiding means (7) have at least one light exit region (9) arranged for optical coupling to the signal sink device (4), which region (9) is arranged to emit the optical signal (S) and is of light-scattering design and by means of which it is possible for the optical signal (S) emerging from the light-guiding means (7) to be scattered into an area of space directed towards the signal sink device (4).

8. A signal transmission system (1) as claimed in claim 7, characterized in that the light-guiding means (7) are arranged to be planar in form in their light exit region (9).

9. A signal transmission system (1) as claimed in claim 1, characterized in that the light-guiding means (7) have at least one light entry region (8) arranged for optical coupling to the signal source device (2), which region (8) is arranged to receive the optical signal (S) and has a light-collecting design, and by means of which it is possible for the optical signal (S) entering the light entry region (8) to be collected into the light-guiding means (7).

10. A signal transmission system (1) as claimed in claim 9, characterized in that the light-guiding means (7) are arranged to be planar in form in their light entry region (8).

11. A garment (15) for a signal transmission system (1), characterized in that the garment (15) has light-guiding means (7) that are able to be coupled optically to a signal source device (2) and a signal sink device (4) and that are arranged to transmit an optical signal (S) representing a transmission signal generated by the signal source device (2).

12. A signal transmission method for transmitting a transmission signal from a signal source device (2) to a signal sink device (4), wherein the transmission signal is generated by means of the signal source device (2) and processed by means of the signal sink device (4), which method has the steps specified below, namely, transmission of a signal

representing the transmission signal from the signal source device (2) to the signal sink device (4) by means of transmission means that are provided between the signal source device (2) and the signal sink device (4) and that are coupled to the signal source device (2) and the signal sink device (4) for the transmission of signals, characterized in that use is made of an optical signal (S) representing the transmission signal, which optical signal (S) is transmitted by light-guiding means (7) forming the transmission means, which light-guiding means (7) are coupled optically to the signal source device (2) and the signal sink device (4), wherein the optical signal (S) is emitted from the signal source device (2) to the light-guiding means (7) and wherein the optical signal (S) is emitted from the light-guiding means (7) to the signal sink device (4) and is received by the signal sink device (4).

13. A signal transmission method as claimed in claim 12, characterized in that the optical system (S) is transmitted from the signal source device (2) to the light-guiding means (7) via a first air-gap (10).

14. A signal transmission method as claimed in claim 12, characterized in that the optical signal (S) is transmitted from the light-guiding means (7) to the signal sink device (4) via a second air-gap (11).